

[54] **HAND-HELD FINGER MOVEMENT
ACTUATED COMMUNICATION DEVICES
AND SYSTEMS EMPLOYING SUCH
DEVICES**

[76] Inventor: **Henry C. Penner**, 3320 Bardstown
Rd., #105, Louisville, Ky. 40218

[21] Appl. No.: **105,597**

[22] Filed: **Oct. 8, 1987**

[51] Int. Cl.⁴ **G06F 3/02**

[52] U.S. Cl. **341/20; 341/21;
340/407; 434/114**

[58] Field of Search **340/365 R, 365 S, 407,
340/825.19; 400/87, 88; 434/112, 113, 114;
341/20, 21, 22, 26**

[56] **References Cited**

U.S. PATENT DOCUMENTS

2,972,140	2/1961	Hirsch .	
3,022,878	2/1962	Seibel et al.	340/365 R
3,831,296	8/1974	Hagle	340/407
3,925,779	12/1975	Gerstenhaber	340/337
3,976,995	8/1976	Sebestyen	340/337
4,074,444	2/1978	Laenger, Sr. et al.	340/365 R
4,075,621	2/1978	Salmon	340/337
4,241,521	12/1980	Dufresne	434/112
4,414,537	11/1983	Grimes	340/365 S
4,458,238	7/1984	Learn	340/365
4,467,321	8/1984	Volnak .	
4,516,939	5/1985	Crimmins, Jr. .	
4,517,424	5/1985	Kroczyński .	

FOREIGN PATENT DOCUMENTS

8603870	7/1986	PCT Int'l Appl. .
1475886	6/1977	United Kingdom .

Primary Examiner—David K. Moore

Assistant Examiner—M. Fatahiyar

Attorney, Agent, or Firm—Kerkam, Stowell, Kondracki
& Clarke

[57] **ABSTRACT**

Disclosed are various forms of hand-held communication devices which serve as alternatives to a keyboard and which, in addition, allow the user to receive communications via the sense of touch. Although not so limited, the device is well-adapted for use by persons who are speechless, deaf and speechless, or even blind, deaf and speechless. The present invention provides particularly compact and efficient finger movement actuated communication devices for individually responding to thrust and push motions of at least one finger of a person's hand. Thus, each finger can operate two switch elements, and the four fingers of a person's hand can operate eight switch elements in predetermined combinations suitable, for example, for communication in a binary code. In a first disclosed embodiment, a handle-like body supports eight switch actuators arranged as four pairs, with each of the pairs corresponding to a particular finger. The two switch actuators are positioned for selective activation by distal and proximal segments of a single finger. In a second disclosed embodiment, four switch actuators are provided for actuation by the fleshy portions of a person's fingertips. Each of the switch actuators supports two distinct types of movement, pushing and sliding, and corresponding operate a pair of switch elements. In a third disclosed embodiment, collar-like rings are worn about the proximal and middle segments of the user's hand. Relative motion between the collar-like rings and a wrist harness is sensed in order to respond to thrust and push motions of the fingers.

5 Claims, 11 Drawing Sheets

